Appendix to Resolution no 26/IV/2023 of 27 April 2023

Description of expected learning ouctomes at Szkoła Doktorska Akademii Wychowania Fizycznego im. Bronisława Czecha w Krakowie

Scientific discipline: physical culture sciences

Qualifications Framework Level: 8 PRK

This description includes first degree characteristics for Level 8 as defined in the Integrated Qualifications System Act of 22 December 2015 (Journal of Laws year 2016, item 64 and 1010) and second degree characteristics as defined in Resolution of the Minister of Science and Higher Education of 28 November 2018 on second-degree characteristics of learning outcomes for qualifications at Levell 8 of the Polish Qualification Framework.

Learning outcome symbols	Learning outcome	Reference to universal PRK level characteristics	Reference to the second-degree characteristics of the PRK, including the effects specific to the discipline of physical culture sciences.
Knowledge: knows and understands			
W_01	has the knowledge of and advanced understanding of terminology, contemporary scientific theories, developmental trends, and the latest achievements in the chosen field, enabling independent formulation and resolution of research problems; is familiar with the results of the latest studies within the area of individual research inquiries, allowing for the formulation of conclusions based on these findings	P8_W	P8_WG
W_02	knows and understands the role of physical culture sciences within the Polish education and healthcare systems and is aware of the significance of physical activity in maintaining individual and societal health; possesses in-depth knowledge of shaping pro-health behaviors	P8_W	P8_WG

W_03	is familiar with various types of sources and scientific information, methods of acquiring the latest knowledge and principles of analysis.; has expertise in scientific communication, knows and understands the significance and the principles of disseminating research results, including open-access publishing; is knowledgeable about the principles and forms of knowledge transfer, particularly the connection between scientific research and practice (commercialization of research findings)	P8_W	P8_WG P8_WK
W_04	has the knowledge of scientific research methodology, including issues related to the selected thematic area within the discipline of physical culture sciences	P8_W	P8_WG
W_05	has the knowledge of the principles behind measurement and diagnostic equipment used in the selected thematic area within the discipline of physical culture sciences	P8_W	P8_WG
W_06	is familiar with sources of funding for scientific, research and development as well as scholarship programs, as well as the types and principles of current grant competitions; understands the distribution of costs in scientific, research and development as well as scholarship projects depending on their type and knows how to account for funds allocated to research projects	P8_W	P8_WG
W_07	possesses extensive knowledge of methods, techniques, and principles for preparing scientific presentations and publications	P8_W	P8_WG
W_08	knows and analyzes the legal acts that constitute a framework for the functioning of higher education institutions as well as the development of study plans and curricula	P8_W	P8_WG
W_09	has in-depth knowledge of modern teaching concepts, methods and tools in higher education and understands the role of the academic teacher in this process	P8_W	P8_WG
W_10	is familiar with statistical methods and techniques, the principles and procedures for conducting statistical analyses and statistical inference	P8_W	P8_WG
W_11	possesses knowledge of legal instruments that enable protection of scientific achievements	P8_W	P8_WG

W_12	has knowledge of IT tools and the principles of processing scientific research results	P8_W	P8_WG
W_13	possesses extensive knowledge of the connections between general and academic ethics	P8_W	P8_WK
W_14	has knowledge of the essence, forms, and instruments of mentoring in various fields of social and economic life, with particular emphasis on science and academic education, as well as the role and significance of scientific mentors in the development of young researchers and academic teachers	P8_W	P8_WG P8_WK
W_15	possesses advanced knowledge of social paradigms and understands the cultural determinants of the needs and problems of individuals and social groups	P8_W	P8_WK
W_16	has an advanced knowledge and understanding of facts and phenomena in the field of medical sciences and health sciences related to Medical Engineering	P8_W	P8_WG
W_17	possesses advanced knowledge of the functions and activity of individual physiological systems of the human body and explains their interactions	P8_W	P8_WG
W_18	has extensive knowledge of conducting scientific research, modeling, and forecasting, enabling description, understanding, and interpretation of phenomena occurring in the tourism economy and recreation	P8_W	P8_WK
W_19	has knowledge of issues considered within the framework of microeconomics and macroeconomics	P8_W	P8_WK
W_20	has the knowledge of the place and significance of philosophy within the system of sciences, as well as its specific subject matter and methodology, which they can creatively apply in research	P8_W	P8_WG
W_21	possesses extensive knowledge of biochemical, metabolic, and genetic processes, as well as the mechanisms of their regulation and interconnections at the molecular and cellular levels	P8_W	P8_WG
W_22	has detailed knowledge in the field of occupational therapy and the diagnostic methods used by occupational therapy practitioners	P8_W	P8_WG

W_23	knows and understands biochemical and physiological processes occurring in cells and has knowledge of the functioning of human tissues and organs	P8_W	P8_WG
W_24	knows and understands fundamental concepts and principles of intellectual property protection, copyright law and data protection, as well as the legal and economic determinants of practical publishing activity; they also possess structured, detailed knowledge of tools, methods, and techniques for producing written works, their circulation and usage; the significance of written communication in social life; the circulation of electronic information and strategies for disseminating and evaluating written resources	P8_W	P8_WG P8_WK
Skills: can do			
U_01	is able to characterize scientific information, define and redefine research problems during the process of scientific inquiry, can analyze scientific texts in terms of their content and relevance to their own research work; is capable of planning and carrying out individual and team research projects, including those that are conducted in an international environment	P8_U	P8_UW P8_UO
U_02	making use of knowledge in medical sciences, health sciences, and physical culture sciences can promote knowledge about health promotion to a broad audience	P8_U	P8_UK
U_03	can use technically advanced measurement and diagnostic equipment applied in a chosen topic area of physical culture sciences	P8_U	P8_UW
U_04	can create and utilize advanced research methods and tools; is able to plan research work in accordance with methodological principles, properly define research objectives and subjects, formulate hypotheses and research questions, develop methods, techniques and research tools, apply them creatively and draw conclusions based on research results	P8_U	P8_UW
U_05	recognizes different types of research projects and is capable of preparing applications for research funding, including creating research budgets in line with competition requirements	P8_U	P8_UW

U_06	can systematize, analyze, and evaluate scientific information in accordance with evidence-based practice principles, assess the credibility of information, and categorize works according to the hierarchy of scientific evidence; utilizing their knowledge, they can critically analyze and assess research findings in their scientific discipline as well as their own contribution to the development of this discipline, can formulate new solutions to problems within existing and modified methodological paradigms	P8_U	P8_UW
U_07	is able to prepare scientific publications in accordance with the principles of academic writing and in line with intellectual property protection	P8_U	P8_UK
U_08	can critically assess the current state of research in the field of study, related to their doctoral project as well as engage in scientific discourse and initiate debate	P8_U	P8_UW P8_UK
U_09	can apply knowledge from the discipline of physical culture sciences to creatively identify, formulate, and innovatively solve complex problems or conduct research-oriented tasks; can create a plan for their own scientific development and independently carry out all stages of the research process	P8_U	P8_UW P8_UU
U_10	can plan educational activities, taking into account learning outcomes, assessment requirements, and student evaluation in terms of knowledge, skills and social competencies	P8_U	P8_UU
U_11	can teach classes using modern methods and tools	P8_U	P8_UU
U_12	can use appropriate tools and procedures for statistical analysis, apply suitable descriptive statistical measures, interpret statistical analysis results and critically evaluate them, can organize and present statistical data in tabular and graphical formats	P8_U	P8_UW
U_13	can prepare databases for statistical calculations and apply parametric and non-parametric tests for variables	P8_U	P8_UW
U_14	has the practical ability to apply mentoring knowledge in scientific research, particularly in establishing contact with leading scholars in their field and maintaining long-term collaboration with top scientific institutions nationally and internationall	P8_U	P8_UK P8_UO

U_15	can identify and describe different research perspectives in the social physical culture sciences	P8_U	P8_UW
U_16	can document and present their own research results and the achievements of other researchers, is able to disseminate research findings through conference presentations, tailoring their speeches to both the discussed issues and the interests, activity, and attention of other conference participants	P8_U	P8_UW P8_UK
U_17	can conduct measurements and assessments of physiological, biochemical and biophysical indicators as well as document and interpret the obtained results	P8_U	P8_UW
U_18	can properly design basic psychological studies	P8_U	P8_UW P8_UU
U_19	can verify statistical hypotheses	P8_U	P8_UW
U_20	can adapt the Snoezelen method to the needs of specific patient groups	P8_U	P8_UW
U_21	is able to critically assess the scientific output within the discipline in which an article is prepared	P8_U	P8_UW
U_22	can recognize the importance of knowledge from other disciplines in resolving cognitive and practical problems	P8_U	P8_UW
U_23	can practically use the knowledge of preparing and organizing scientific conferences	P8_U	P8_UK
U_24	can apply diagnostic methods used in occupational therapy practice.	P8_U	P8_UW
U_25	is proficient in using advanced techniques for measuring morphological characteristics, assessing physical development and analyzing composition of the human body	P8_U	P8_UW
U_26	can utilize advanced research methods and tools to assess the human motoric system	P8_U	P8_UW
U_27	by applying knowledge of dietetics and nutrition can promote a healthy lifestyle	P8_U	P8_UW

U_28	can use knowledge from physical culture sciences to monitor an athlete's condition, training loads, exercise techniques, sports performance and behavior during competitions	P8_U	P8_UW
U_29	is capable of correctly using instruments and devices for isolating and assessing genetic material	P8_U	P8_UW
U_30	can design an experimental setup to illustrate the effect of a selected factor on cells, correctly select analytical methods based on the experiment profile, interpret quantitative and qualitative changes in the studied material and translate obtained results and knowledge to the level of human tissues and organs	P8_U	P8_UW
U_31	can recognize and analyze different types of documents and digital resources in terms of their content, structure, and functionality and assess their quality (including aesthetic quality)	P8_U	P8_UW
U_32	can search, evaluate, select, and utilize information using various sources, tools and search strategies, as required by the problem in question	P8_U	P8_UW
Social competencies: is ready to			
K_01	is ready for a critical assessment of acquired information, interpreting it, drawing conclusions, and formulating opinions; is prepared to critically evaluate their own achievements within the represented discipline – i.e.: physical culture sciences	P8_K	P8_KK
K_02	is ready to acknowledge the importance of knowledge from other disciplines and fields (beyond the one in which the doctoral project is pursued) in solving cognitive and practical problems	P8_K	P8_KR
K_03	is aware of being part of the scientific community, adheres to its ethical principles, and takes responsibility for its development; demonstrates creativity in seeking new research areas and directions, actively participates in communication within the research community	P8_K	P8_KR P8_KO
K_04	is ready to independently carry out assigned tasks, properly organizes work, critically analyzes and evaluates research findings, and recognizes contributions to the development of knowledge	P8_K	P8_KO
K_05	is aware of the necessity to improve qualifications for better personal use and for sharing specialist knowledge with others; shows commitment to continuous learning and enhancing professional and research competencies in an interdisciplinary dimension	P8_K	P8_KR P8_KO
K_06	exhibits the appropriate attitude as an academic teacher, understands the need for improving and updating knowledge and acquired skills	P8_K	P8_KR P8_KO

K_07	the acquired knowledge and skills enable the application of selected concepts and research methods in studies on physical culture	P8_K	P8_KR
K_08	recognizes the need for a critical approach to scientific assumptions, demonstrating responsibility for the social consequences of research outcomes; is capable of transferring scientific findings into the social sphere	P8_K	P8_KO
K_09	understands the need for self-education and can collaborate with other persons, taking responsibility for their own actions in pursuit of common goals when carrying out team projects	P8_K	P8_KK
K_10	understands the necessity of using statistical analyses to evaluate research results and makes sure they are properly interpreted	P8_K	P8_KK
K_11	appreciates the importance of intellectual integrity in both their own actions as well as those of others whereas the acquired knowledge and skills shape their moral sensitivity and responsibility for academic activity; shows commitment to sustaining and developing the ethos of research communities	P8_K	P8_KR
K_12	is able to analyze databases and communicate about them with others using professional terminology	P8_K	P8_KK
K_13	is capable of establishing and maintaining long-term collaboration with various research teams, utilizing the knowledge and skills gained through cooperation with an academic mentor	P8_K	P8_KO
K_14	appreciates the significance of scientific research for the development of professional practice	P8_K	P8_KK
K_15	is capable of taking responsibility for actions, ensuring safety for oneself and surroundings	P8_K	P8_KO
K_16	is aware of the ethical aspects of working for a publisher of a scientific journal, including the necessity of adhering to professional ethics and standards (especially concerning copyright law compliance)	P8_K	P8_KR

Meaning of the symbols used:

P8 – Level 8 of the Polish Qualifications Framework (PRK)

W – **knowledge**: **WG** – depth and scope; **WK** - context

U – **skills**: **UW** – use of knowledge; **UK** - communication; **UO** – organization of work; **UU** - learning

K – **social competencies**: **KK** – critical assessment; **KO** - responsibility; **KR** – professional role